

Notice of Allowability

Application No.

10/706,891

Examiner

Dang T. Nguyen

Applicant(s)

LEE, DONG-YANG

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 30 November 2005.
2. ☒ The allowed claim(s) is/are 1 - 12 and 16 - 24.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

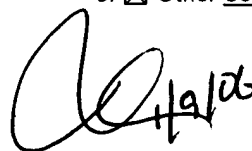
* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☒ Other Search history.



RICHARD ELMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Response to Amendment

1. This office action is in response to applicant's amendment received on 11/30/05.
2. Claims 1 - 4 and 21 have been amended. Claims 13-15 have been cancelled. Claims 1 - 12 and 16 - 24 are pending on this application. Claims 1, 7, 12, 16 and 21 are independent claims.

Allowable Subject Matter

3. Claims 1 - 12 and 16 - 24 are allowed.
4. The following is an examiner's statement of reasons for allowance:

With respect to claim 1, the combination as claimed wherein at least the limitation of "performing the command except for the auto-precharge function; initiating a timer in response to the received command; and performing the auto-precharge function for automatically precharging the bank of memory cells responsive to the timer reaching a predetermined value" is not disclosed, suggested, or rendered obvious by the prior art of record.

With respect to claim 7, the combination as claimed wherein at least the limitation of "a precharge control circuit having at least one timer, wherein the precharge control circuit is configured to issue a precharge control signal to the memory cell array responsive to receipt of a command that includes an auto-precharge function a predetermined time after the command is received" is not disclosed, suggested, or rendered obvious by the prior art of record.

With respect to claim 12, the combination as claimed wherein at least the limitation of "performing a read operation responsive to the received read command; delaying initiation of an auto-precharge operation called for by the auto-precharge function until the timer reaches a predetermined time" is not disclosed, suggested, or rendered obvious by the prior art of record.

With respect to claim 16, the combination as claimed wherein at least the limitation of "a precharge control circuit that includes at least one timer that is reset in response to the auto-precharge control signal and that initiates precharging of at least a part of the memory cell array when the at least one timer reaches a predetermined value" is not disclosed, suggested, or rendered obvious by the prior art of record.

With respect to claim 21, the combination as claimed wherein at least the limitation of "a precharge control circuit that includes a plurality of timers corresponding to the plurality of banks, respectively, wherein the timer corresponding to the selected bank is reset in response to the auto-precharge control signal, and controls the bank to be precharged when the timer reaches a predetermined value" is not disclosed, suggested, or rendered obvious by the prior art of record.

5. The prior art made of record and considered pertinent to the applicant's disclosure does not teach or suggest the claimed limitations. McClannahan and Matano, taken individually or in combination, do not teach the claimed invention of performing the auto-precharge function for automatically precharging the bank of memory cells responsive to the timer reaching a predetermined value, in combination with other limitations.

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6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

Prior art

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

McClannahan	Patent No. US 6,438,670 B1	Date of Patent: Aug. 20, 2002
Matano	Patent No. 5,566,119	Date of Patent: Oct. 15, 1996

Contact Information

8. Any inquiry concerning this communication from the examiner should be directed to Dang Nguyen, who can be reached by telephone at (571) 272-1955. Normal contact times are M-F, 8:00 AM - 4:30 PM.

Upon an unsuccessful attempt to contact the examiner, the examiner's supervisor, Richard Elms, may be reached at (571) 272-1869.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist, whose telephone number is (703) 305-3900. The faxed phone number for organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the Status of an application may be obtained from the

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patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or EBC@uspto.gov.

Dang Nguyen 1/4/2006